

GROUP ART UNIT: 1746

APPEAL NO.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

APPELLANTS' BRIEF (CORRECTED)

Spencer Wayne Bruce, et al.

Application for Patent Filed August 17, 2000

Serial No. 09/641,155 ✓

PROCESS FOR CLEANING REACTORS

Ronald D. Bakule
Agent for Appellants

J.L. Perrin
Examiner

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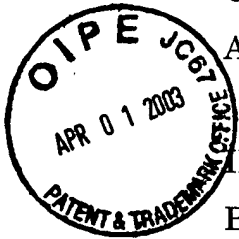
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

DN 99-56

In re application of

Spencer Wayne Bruce, et al.

Paper No.: 11

Serial No. 09/641,155

Group Art Unit: 1746

Filed: August 17, 2000

Examiner: J.L. Perrin

For: PROCESS FOR CLEANING REACTORS

Honorable Commissioner of Patents and Trademarks

Washington, DC 20231

BRIEF FOR APPELLANTS

This is an appeal from the final rejection by the Examiner of September 4, 2002 rejecting claims 1-6 and 8. Appellants filed a Notice of Appeal pursuant to 37 C.F.R. 1.191 on December 4, 2002.

An authorization to charge payment of the fee for the filing of the Appeal Brief to Deposit Account 18-1850 is also enclosed.

REAL PARTY IN INTEREST [37 C.F.R. 1.192(c)(1)]

The real party in interest is Rohm and Haas Company, 100 Independence Mall West, Philadelphia, PA 19106-2399.

RELATED APPEALS AND INTERFERENCES [37 C.F.R. 1.192(c)(2)]

There are no other related appeals or interferences that will directly affect or be directly affected or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS [37 C.F.R. 1.192(c)(3)]

The status of the claims is as follows:

Allowed claims	-	none
Claims objected to	-	none
Claims cancelled	-	none
Claims pending	-	1-10
Claims rejected	-	1-10
Claims on appeal	-	1-6 and 8

STATUS OF AMENDMENTS [37 C.F.R. 1.192(c)(4)]

The rejected claims are set out in Appendix 1; the Amendment After Final Rejection (Paper No. 9) mailed on November 21, 2002 was not entered.

SUMMARY OF INVENTION [37 C.F.R. 1.192(c)(5)]

Appellants claim (claims 1-6) a process including:

feeding a liquid selected from the group consisting of water, a caustic solution, and a mixture of caustic and at least one organic solvent through multiple pressure sources to a reactor having an agitator with blades and stationary pressure sources aimed at the agitator blades; and

emptying the reactor; wherein the agitator is rotated while the solution is fed to the reactor.

Appellants also claim (claim 8) a process for cleaning a reactor including:

feeding a liquid solution that is a combination of an aqueous base and an organic solvent and comprises from 15 weight percent to 30 weight percent aqueous base and from 40 weight percent to 60 weight percent organic solvent, based on the total weight of the solution, and the remainder water to the reactor; and

emptying the reactor; wherein, the reactor is selected from the group consisting of a plate-frame heat exchanger, a plate-fin heat exchanger, and a spiral-plate heat exchanger.

ISSUES [37 C.F.R. 1.192(c)(6)]

The issue is whether appellants' invention of claims 1, 2, and 4 is unpatentable under 35 USC 103(a) over US Patent No. 3,985,572 to Petermann, et al. ("Petermann"); whether appellants' invention of claims 1, 3, 5, and 6 under 35 USC 103(a) is unpatentable over Petermann in view of EP 248,681 to Komabashiri, et al. ("Komabashiri"); and whether appellants' invention of claim 5 under 35 USC 103(a) is unpatentable over Petermann in view of US Patent No. 5,145,597 to Rodriguez, et al. ("Rodriguez"). And, further, whether appellants' invention of claim 8 under 35 USC 103(a) is unpatentable over US Patent No. 5,782,989 to Rueter ("Reuter") in view of Komabashiri.

THE REJECTIONS

Claims 1, 2, and 4 stand finally rejected under 35 USC 103(a) as being unpatentable over Petermann. Claims 1, 3, 5, and 6 stand finally rejected under 35 USC 103(a) as being unpatentable over Petermann in view of Komabashiri. Claim 5 stands finally rejected under 35 USC 103(a) as being unpatentable over Petermann in view of Rodriguez. And Claim 8 stands

finally rejected under 35 USC 103(a) as being unpatentable over Rueter in view of Komabashiri.

The Examiner's Arguments

The Examiner asserts that claims 1, 2, and 4 are unpatentable under 35 USC 103(a) over Petermann because Petermann discloses the elements of appellants' process except for the stationary and rotated nature of the agitator and pressure sources which are different. The examiner posits that one having ordinary skill in the art would have found it *a priori* obvious to reverse the nature of these components.

The examiner asserts that claims 1, 3, 5, and 6 are unpatentable under 35 USC 103(a) over Petermann in view of Komabashiri because of his position over Petermann (applied as above) and Komabashiri's use of certain "conventional" materials and cleaning solutions.

The examiner asserts that Claim 5 is unpatentable under 35 USC 103(a) over Petermann in view of Rodriguez because of his position over Petermann (applied as above) and Rodriguez's use of an aqueous base or caustic.

And the examiner asserts that claim 8 is unpatentable under 35 USC 103(a) over Rueter in view of Komabashiri because Reuter discloses a process for cleaning a reactor including certain elements of claim 8 and Komabashiri disclose a cleaning solution of a certain composition.

GROUPING OF CLAIMS [37 C.F.R. 1.192(c)(7)]

As to the rejections applied against claims 1-6 and 8 under 35 USC 103(a), it is appellants' intention for each ground of rejection that the rejected claims stand or fall together.

ARGUMENTS [37 C.F.R. 1.192(c)(8)]

The examiner rejected claims 1, 2, and 4 under 35 USC 103(a) as being unpatentable over Petermann. The examiner points out certain disclosures within Petermann but concedes that Petermann does not disclose stationary pressure sources aimed at the agitator blades wherein the agitator is rotated while the solution is fed to the reactor. Nor does the examiner meet his burden of providing a prima facie case of obviousness by pointing out any teaching or suggestion within Petermann to modify the structure or method of Petermann by changing the essential nature of his apparatus, i.e., rotating pressure sources and a stationary agitator. In fact, Petermann points out that his cleaning nozzles “.. are moved over the inner surface of the tanks along a complex predetermined path by means of a motor drive means which may be controlled by an electronic computer. This is important because the container tanks are often provided with baffles, agitator blades, and other obstructions inside such tanks ...Thus, the spray nozzles must move around such internal obstructions which requires a very complex motion of such nozzles that is accomplished by the computer in accordance with computer programs stored therein.” (Petermann, Col. 1, lines 30-43) (emphasis added).

Appellants respectfully assert that the fair teaching of Peterman is that it is essential to provide exclusively movable nozzles and, indeed, the complex paths which they may need to traverse may need to be controlled by a computer rather than by the reactor operator. Petermann's apparatus requires (Petermann, claim 1) “...automatic drive means for moving said stream forming means over the container surfaces along a predetermined path to scan said container surfaces with said liquid stream ..”. Petermann's cleaning method requires (Petermann, claim 16) “...scanning said stream over said surface by moving said stream about a cleaning axis and longitudinally along said axis with a support means while maintaining said angle substantially constant ..”. The highly controlled movement of the cleaning stream and the structure to achieve that movement is the essence of

Petermann's invention. There is no motivation within Petermann to change or eliminate Petermann's structure or substitute stationary pressure sources or to expect success in so doing. The examiner appears to argue that simple reversal of the stationary and moving nature of the cleaning stream source and agitator is not patentable *per se*, but such a reversal in this case would leave an inventor with a complex cleaning stream structure (See Petermann figures) having no utility, thus destroying the essence of Petermann's invention in order to extricate elements of appellants' invention. It would not have been *prima facie* obvious to delete an important element of a process if such a deletion or omission would destroy the invention on which the prior art reference is based. Compare *Ex parte Hartmann*, 186 USPQ 366, 367 (Bd. App 1974). Further, the examiner's logic of reversal would suggest that a complex programmed agitator motion would be required were the cleaning stream source to be stationary. Therefore, a simple reversal would not provide appellants' invention of claims 1, 2, and 4. Appellants respectfully submit that their method of claims 1, 2, and 4 is not obvious over Petermann.

The examiner rejected claims 1, 3, 5, and 6 under 35 USC 103(a) as being unpatentable over Petermann in view of Komabashiri. The examiner argues Petermann as applied above and submits that Komabashiri discloses polymerization reactor cleaning by contacting a reactor with certain cleaning solutions. Appellants respectfully submit that the deficiencies of Petermann as presented above stand and are not perfected by the teaching or suggestion of Komabashiri. Appellants respectfully submit that their method of claims 1, 3, 5, and 6 is not obvious over Petermann in view of Komabashiri because the combination does not teach or suggest their method as claimed.

The examiner rejected claim 5 under 35 USC 103(a) as being unpatentable over Petermann in view of Rodriguez. The examiner argues Petermann as above and submits that Rodriguez discloses a polymerization reactor cleaning composition which contains an aqueous caustic solution. Appellants respectfully submit that the deficiencies of Petermann as

presented above stand and are not perfected by the teaching or suggestion of Rodriguez. Appellants respectfully conclude that the method of their claim 5 is not obvious over Petermann in view of Rodriguez because the combination does not teach or suggest their method as claimed.

The examiner rejected claim 8 under 35 USC 103(a) as being unpatentable over Rueter in view of Komabashiri. The examiner has pointed to certain elements of appellants' claim 8 in Rueter and stated that Komabashiri disclosed certain levels of aqueous base and organic solvent. Appellants respectfully submit that the examiner has not met his burden of establishing a *prima facie* case of obviousness with his rejection of claim 8 for obviousness over Rueter in view of Komabashiri since he has provided no indication of the teaching, suggestion, or motivation within either Rueter or Komabashiri to combine the two references in order to solve the problem faced by appellants. Further, the examiner stated that Rueter discloses a process for cleaning a reactor comprising feeding a solution selected from an aqueous base, an organic solvent of isopropanol and acetone, emptying the reactor; wherein the reactor is a heat exchanger. Appellants respectfully traverse. Rueter discloses a solvent system (Rueter, col.1, lines 8-13) useful as a cleaning solution; the system contains acetone and one or more organic solvents which are soluble in acetone, and, at most, a minor amount of a strong base which may be added dissolved in minor amounts of water (the composition may include up to about 5% water), but there is no teaching or suggestion in Rueter of an aqueous cleaning composition as it would be known to one skilled in the art nor motivation to use Komabashiri's cleaning solutions. Furthermore, Rueter does not teach or suggest a reactor which is a heat exchanger but rather a system which includes a "reactor *per se*, a heat exchanger, etc" (col. 6, lines 19-20) and certainly does not provide motivation to use a reactor which is a plate-frame heat exchanger, a plate-fin heat exchanger, or a spiral-plate heat exchanger nor to solve the problem of cleaning such a reactor. Nor does Komabashiri provide motivation to use the

heat exchanger reactors of appellants' method. The examiner has identified elements of appellants' method within the Reuter and Komabashiri, but has not pointed to the reason for combining them. "Although a reference need not expressly teach that the disclosure contained therein should be combined with another, the showing of combinability, in whatever form, must nevertheless be "clear and particular"" *Winner International Royalty Corporation v. Wang*, 202 F.3d 1340 quoting *In re Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617.

Conclusions

Appellants respectfully submit that the present invention as defined by claims 1, 2, and 4 was not obvious as a whole to one of ordinary skill in the art at the time the invention was made over Peterman under 35 U.S.C. 103(a) because the examiner has not met his burden of establishing a *prima facie* case of obviousness and, in any event, appellants' invention is not taught or suggested therein.

Appellants respectfully submit that the present invention as defined by claims 1, 3, 5, and 6 was not obvious as a whole to one of ordinary skill in the art at the time the invention was made over Peterman in view of Komabashiri under 35 U.S.C. 103(a) because the examiner has not met his burden of establishing a *prima facie* case of obviousness and, in any event, appellants' invention is not taught or suggested therein.

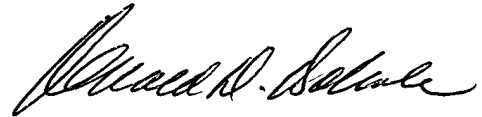
Appellants respectfully submit that the present invention as defined by claim 5 was not obvious as a whole to one of ordinary skill in the art at the time the invention was made over Peterman in view of Rodriguez under 35 U.S.C. 103(a) because the examiner has not met his burden of establishing a *prima facie* case of obviousness and, in any event, appellants' invention is not taught or suggested therein.

Appellants respectfully submit that the present invention as defined by claim 8 was not obvious as a whole to one of ordinary skill in the art at the

time the invention was made over Reuter in view of Komabashiri under 35 U.S.C. 103(a) because the examiner has not met his burden of establishing a *prima facie* case of obviousness and, in any event, appellants' invention is not taught or suggested therein.

Appellants respectfully request the Board to reverse the Examiner's rejections and enter a Notice of Allowance. The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ronald D. Bakule", written in a cursive style.

RONALD D. BAKULE

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DATE: March 27, 2003

APPENDIX [37 C.F.R. 1.192(c)(9)]

CLAIMS 1-6 and 8

1(amended). A process comprising:

feeding a liquid selected from the group consisting of water, a caustic solution, and a mixture of caustic and at least one organic solvent through multiple pressure sources to a reactor having an agitator with blades and stationary pressure sources aimed at the agitator blades; and emptying the reactor; wherein the agitator is rotated while the solution is fed to the reactor.

2. The process according to claim 1 wherein, the multiple pressure sources are hoses equipped with nozzles.

3. The process according to claim 2 wherein, the hoses are made of 316 stainless steel.

4. The process according to claim 3 wherein, the solution is fed to the reactor at a pressure from 100 to 700 bar.

5. The process according to claim 1 wherein, the reactor is equipped with a heat exchanger in an external loop and the heat exchanger and external loop are cleaned with an aqueous base at a temperature of from 20°C to 150°C.

6. The process according to claim 5 wherein, the heat exchanger and external loop are cleaned with caustic at a temperature of from 90°C to 150°C.

8. The process according to claim 7 wherein, the solution is a combination of an aqueous base and an organic solvent and comprises from 15 weight percent to 30 weight percent aqueous base and from 40 weight percent to 60 weight percent organic solvent, based on the total weight of the solution, and the remainder water.

Claim 7 is included herein for reference purposes since claim 8 depends from cancelled claim 7. An amendment incorporating the subject matter of claim 7 into claim 8 was submitted after final rejection (Paper No. 9) but was not entered by the examiner (Paper No. 10).

7(amended). A process for cleaning a reactor comprising:
feeding a liquid selected from the group consisting of an aqueous base, an organic solvent, and combinations thereof to the reactor; and
emptying the reactor; wherein, the reactor is selected from the group consisting of a plate-frame heat exchanger, a plate-fin heat exchanger, and a spiral-plate heat exchanger.



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Washington, DC 20231

CERTIFICATE OF FIRST CLASS MAILING

Dear Sir:

I hereby certify that this Corrected Original Appeal Brief and 2 copies are being deposited as First Class Mail with the United States Postal Service in an envelope addressed to the Assistant Commissioner for Patents, Washington, DC 20231 on the date indicated next to my signature below.

Date *March 27, 2003*

Signature *David P. Schuler*